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TITLE: Utilization of Telemedicine for Evaluation and Treatment  
of Hepatitis C Patients in Military Health Clinics

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# MidTerm Overall Evaluation Report

PROPOSAL: 1999000160

**TITLE: Utilization Of Telemedicine For Evaluation And Treatment Of Hepatitis C Patients In  
Military Health Clinics**

## 1. ACCOMPLISHMENTS:

The hepatitis C Telemedicine project is being conducted in three phases. The first phase of the project is to validate the use of desktop VTC system connected at 384 kbs to visually diagnose patients with physical findings secondary to chronic liver disease. Diagnostic agreement between in person, face-to-face evaluations versus those performed using the VTC system will be compared in patients with liver disorders. This first phase of the project was added to the original submitted protocol because of a lack of published literature on the utilization of VTC in evaluating and treating patients with liver disorder. It is necessary to ensure that common physical exam findings in patients with liver disease can be identified on a VTC system prior to the institution of this system in caring for patients. DCI approval of a research project to complete this task has been granted. The WRAMC DCI approved protocol is entitled "Tele-Hepatitis Phase I: Validation of desktop Video Teleconferencing (VTC) system at 384 kbs ISDN for evaluation of patients with chronic liver diseases" (WRAMC DCI protocol #00-1407). A pilot project has been completed and presented at the 5th Annual American Telemedicine Association conference in Phoenix, AZ, in May 2000 (1). Data from the first five patient evaluated in the pilot project comparing in person exam versus VTC exam showed that there was moderate agreement in physical exam findings in patients with liver disease but was dependent on the bandwidth utilized. A 384 kbs connection was superior to the 128 kbs connection. Thus, a minimum of 384 kbs connection speed will be utilized in the in-house validation study. The second phase of the project is to receive approval for hepatitis C (HCV) treatment protocols that will be utilized to treat NARMC patients. WRAMC DCI has recently approved two treatment protocols for HCV treatment. The first protocol was approved in June 2000 and is entitled "Phase II study of long term PEG Intron for patients who have failed to respond to Rebetrin/Interferon with advanced fibrosis and cirrhosis secondary to hepatitis C" (WRAMC DCI protocol #00-1405). The second protocol was approved in August 2000 and is entitled "A Randomized Multicenter Trial comparing Induction PEG Intron-A Plus Ribavirin versus PEG Intron-A Plus Ribavirin in Patients Who Have Previously Not Responded or Have Relapsed Following Interferon Alpha 2b Based Therapy For Chronic Hepatitis C, with Maintenance Therapy for Patients Who Continue to Remain Non-Responsive" (WRAMC DCI protocol #00-1408). The third phase of this project will be the deployment of this technology to other sites within the NARMC region. VTC technology is being assessed and NARMC site finalization is being performed. At present, 4 desktop VTC systems have been purchased and located within the WRAMC Gastroenterology/Hepatology clinic. The systems are ready to be connected for VTC pending installation of a Primary Rate Interface (PRI) by Walter Reed's Directorate of Information Management (DOIM). These VTC's will then be connected to the PRI using a gateway & MCU. A part-time research assistant has been hired to assist in data collection. Reference: 1. Hwang I, Cannon BL, Holtzmuller KC, Poropatich RK. Feasibility and cost savings in VTC follow-up of patents treated with combination retroviral therapy for chronic hepatitis c. Telemedicine Journal 2000;6(1):106. (abstract)

## 2. PROBLEMS:

Several problems have been encountered in the development and implication of the protocol. The main difficulty in starting the project is the technical delay in installing the PRI lines into the Gastroenterology clinic at Walter Reed. Despite multiple attempts at requesting this service, we have not yet been able to obtain connectivity. Also, there has been turnover of outlying NARMC clinic associate investigators in July 2000. Dr. Ratcliffe (Ft Eustis) left the Army and Dr. Toferi (Ft. Knox) transferred to WRAMC. Replacement associate investigators are being sought.

### **3. LIFE-CYCLE:**

We hope to have PRI connectivity in the second half of the project cycle so that we can complete the in-house validation of VTC in chronic liver disease patients. Also, two additional HCV treatment protocols are being submitted to WRAMC DCI to complete the second phase of the study. These protocols are in the final stage of development. One protocol utilizes PEG-Intron plus ribavirin to treat HCV patients who have never been treated in the past with anti-viral therapy. The other protocol utilizes PEG-Intron plus ribavirin to treat HCV patients who have normal ALT. There will be a research protocol in place to treat NARMC HCV patients in all states of their disease (normal ALT to cirrhosis, untreated and previously treated) via VTC following approval of these studies. The third phase of this project will be submission, approval, and implementation of the protocol to deploy this technology to other sites within the NARMC region. The present proposed medical sites include Fort Drum, West Point, Fort Mammoth, Fort Eustis, Fort Bragg and Fort Knox. The patients from those sites will be evaluated and treated using the web-enabled symptom checklists and desktop VTC system connected at 384 kbs. The cost savings will be determined based on expected travel charges from their home sites to WRAMC for this evaluation.

### **4. DELIVERABLES:**

We hope to document the following items with our project: 1. Validate use of VTC in following patients with chronic liver diseases 2. Decrease cost of following patients on viral hepatitis C protocols. Will document by comparing the expected cost of TDY vs actual cost of VTC. 3. Decrease the number of days of TDY required for follow up for chronic viral hepatitis treatments. This will be documented by comparing the expected number of TDY days with the time away from work to perform VTC evaluation. At present, we are attempting to complete the first of these deliverables. If successful, this project should have application AMEDD wide as chronic viral hepatitis and its treatment (especially hepatitis c) affects the entire Army.